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Teaching ESP -1st year students of electronics and telecommunications

Alexandra-Valeria Popescu^{a *}^a*Faculty of Communication Sciences, "Politehnica" University of Timisoara, P-ța Victoriei 2a, Timisoara, 300006, Romania*

Abstract

The technical faculties require their students to study a foreign language and English is frequently their choice. Specialists from different countries use English both to exchange experience and communicate. ESP has become a priority that helps students to apply what they learn during courses to their own field of study, whether it be electronics, telecommunications, computer science. Students of electronics and telecommunications have foreign languages as an obligatory subject 2 hours per week during their first year. The paper presents some of the problems and difficulties both the ESP teacher and the students are to face during the learning process.

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1. Introduction

English has become the main source of technical progress as it enables rapid exchange of information and research of the common global problems. Specialists from different countries use English to share or exchange information, consequently the study of the English language is a priority nowadays. ESP (English for Specific Purposes) courses put together the acquisition of specific information and the development of language skills. Many of our students are given opportunities to study abroad, to be active participants in various international programmes or conferences. All these activities require academic knowledge, scientific competence and receptivity towards new ideas. The ESP courses help the students to enlarge both their English language and professional knowledge. ESP is oriented towards mastering skills for professional communication and covers subjects varying from accounting, electronics or computer science to tourism and business management. EST courses are integrated into a subject matter area important to the learners.

We agree with Robinson (1991, p.1) who considers ESP “a major activity around the world today.”

2. ESP: Origins and Definition

According to Hutchinson and Waters (1987) the origins of ESP are related to two important historical periods: the first period is at the end of the Second World War that brought with it “an age of enormous and unprecedented expansion in scientific, technical and economic activity on an international scale” (Hutchinson & Waters, 1987, p.6)

^{*} Alexandra –Valeria Popescu. Tel.: +40-722-219-056
E-mail address: anda_vp@yahoo.com

while the second period refers to the Oil Crisis of the early 1970s, which resulted in Western money and knowledge flowing into the oil-rich countries. The language of this knowledge became English. The effect of this development was a pressure on the language teaching profession to deliver the required goods. Whereas English had previously decided its own destiny, it now became subject to the wishes, needs and demands of people other than language teachers (Hutchinson & Waters, 1987, p. 7).

The revolution in linguistics has an extraordinary impact on the emergence of ESP, the linguists focused on the ways in which language is used in real communication. Hutchinson and Waters point out that one significant discovery was in the ways that spoken and written English vary. If language in different situations varies, then tailoring language instruction to meet needs of learners in specific contexts is also possible. Hence, in the late 1960s and in the early 1970s there were many attempts to describe EST (English for Science and Technology).

The same authors mention the role played by psychology. More attention was given to the ways in which learners acquire language and the differences in the ways language is required. Learners were seen to employ different learning strategies, use different skills, and be motivated by different interests and needs. Therefore, focusing on the learners' needs became equally paramount to the methods employed to disseminate linguistic knowledge. Designing specific courses to better meet these individual needs was a natural extension of this thinking. To this day, the catchword in ESL circles is learner-centered or learning-centered.

Strevens (1988) defines English for Specific Purposes (ESP) by making a distinction between four absolute and two variable characteristics:

I. Absolute characteristics:

ESP consists of English language teaching which is:

- designed to meet specified needs of the learner;
- related in content (i.e. themes and topics) to particular disciplines, occupations and activities;
- centred on the language appropriate to those activities in syntax, lexis, discourse and semantics;
- in contrast with General English.

II. Variable characteristics:

ESP may be, but not necessarily:

- restricted as to the language skills to be learned (e.g. reading only);
- not taught according to any pre-ordained methodology(1-2).

Ten years later Dudley-Evans and St. John (1998) offer a modified definition and express their revised view on the essence of ESP from two perspectives: absolute characteristics and variable characteristics.

Absolute characteristics:

- ESP is defined to meet specific needs of the learner;
- ESP makes use of the underlying methodology and activities of the disciplines it serves;
- ESP is centred on the language (grammar, lexis, and register), skills, discourse, and genres appropriate to these activities.

Variable characteristics:

- ESP may be related or designed for specific disciplines;
- ESP may use, in specific teaching situations, a different methodology;
- ESP is likely to be designed for adult learners;
- ESP is generally designed for intermediate and advanced learners.

The range of ESP has been extended and become more flexible in the modified description. The most important element to be mentioned, in this modified definition is that the absolute characteristics of ESP i.e. in contrast with General English have been removed.

3. ESP: Types and Characteristics

The ESP term refers to the teaching of a specific genre for students with a definite, specific goal, or field of study.

Robinson (1991) distinguishes between EOP (English for Occupational Purposes) and EAP/EEP (English for Academic Purposes/English for Educational Purposes). EOP involves work-related needs and training while EAP involves academic study needs. These two categories of EAP and EOP are widely accepted in ESP teaching. Cutting across these is EST (English for Science and Technology) that can refer to both work and study-related needs.

ESP is centred more on language in context than on teaching grammar and language structures and is designed to meet the learners' specific needs and reasons for learning. People learn foreign languages when they have opportunities to use, understand or work with them. The English language is taught as a subject related to the learners' real needs and wishes in a particular field of human activity and it is usable in the employment context.

The ESP course is tailor-made, so that the teaching of the content and method varies according to each field of interest. The students' education is already oriented to a specific field, besides most of them are aware of their needs and aims to use English so that the English courses complete the professional orientation.

The materials used for the ESP courses should be authentic materials. The language the students encounter in these materials should be exactly what they meet in real life. It is the teacher's responsibility to make a rigorous selection of the materials. The selection has in view the real needs of the students' study or future job requirements.

Generally the students are highly motivated as they are able to apply what they learn during their English classes to their main field of study, whether it be computer science, electronics and telecommunications, mechanics or chemistry.

4. ESP Teaching problems and difficulties

Some English teachers are concerned with their lack of knowledge and experience in engineering when they are in the position of ESP teachers. In fact teachers who have already acquired enough experience in teaching English as a second language can exploit their background in language teaching. They can find adequate means to adapt their teaching skills for teaching ESP. ESP teachers are first and foremost teachers of English and their role is not to instruct the students in engineering, on the contrary, it is to enable them to develop and perform their language skills within an engineering context.

The spread of globalization confirms the fact that English has become the language of international communication as more and more people are using English in a growing number of occupational contexts. Nowadays we assist at continuous technological changes that require more science oriented engineers able to perform professional communication.

Consequently the primary goal of any ESP courses for engineers is to teach professional communicative competence, more exactly to communicate in English according to the situation, purpose, and specific roles of the participants. ESP courses are meant to prepare specialists able to use the English language as the main professional communication means in their future jobs and in real-life situations.

For today's students, tomorrow's engineers, English is the means that facilitates access to knowledge in journals, periodicals, and books. Moreover English is the international language used by the participants in international programs, conferences and symposia where more and more students take part and they need to be able to understand specialized spoken language. Such meetings imply an active participation of the students who need abilities and skills of everyday English to communicate and share information with other participants, as well.

In what follows we refer to some problematic aspects of ESP teaching in the Faculty of Electronics and Telecommunications. The technical faculties require their students to study a foreign language. The first year students have foreign languages in the curricula as an obligatory subject (discipline) 2 hours per week. Most students choose English, and their choice is a legitimate one. The first and main problem, the foreign language teachers are confronted with, is the very limited period of the foreign languages study. The second problem they have to face is the number of students in the group that varies between 30 and 40. This large number of the students in the group is a disagreeable situation both for the teacher and the students. Though the majority of the first year students have studied English for ten or eleven years in high school, many of them are low level students. Generally the first year students are not yet aware of the importance of the English course and partially their attitude is acceptable. Many of these students are confronted with new things and situations both in their studies in the technical faculties and in their private life. Unfortunately they have only this first year for the study of English.

Most of the students have limited English vocabulary and poor grammar knowledge, being unable to express their ideas in English, using instead Romanian. Due to this situation they encounter many difficulties during the speaking classes, although these classes are the ones they enjoy the most. Moreover, the first year students are confronted with some other non linguistic problems. Most of them have no habit in studying and practicing English, few or even no chances to speak English with a native speaker, and there is little interest to make any effort in improving their language situation.

Today the industry of telecommunications and electronics is an interdisciplinary field of knowledge putting together different disciplines among which we mention: computer sciences and electrical engineering. The content of telecommunications is marked by a diverging and ever-increasing number of disciplines. Specialists and networking professionals in today's information society require knowledge in many and various areas such as: wireless communication, radio, TV, satellite, computer engineering, telecommunications networking, to name a few.

The study of the English language at the intermediate level for the students in electronics and telecommunications is crucial. We admit that language for engineering, in our case, language for electronics and telecommunications is a different language. This is true even for a native speaker, who has a high level of academic skills but for whom English for electronics and telecommunications is a different language. There are few students in the first year who graduated a high school in electronics and telecommunications and who are more familiar with this field but unfortunately these students do not have satisfactory English language skills. Consequently the ESP teacher is confronted with at least two major problems: first of all the first year students of technical faculties have insufficient knowledge of the subject field in terms of concepts, second they have low level of the English language. It is not an easy task to find materials that are not very specific and use them as the students get information on their knowledge of the subject and to stimulate and encourage them to use their English knowledge, as well. In order to motivate and stimulate the students into getting better results the teacher can provide them with handouts explaining grammatical problems, giving examples, and revealing the relationship between grammar and the text. In this situation the role of the ESP teacher is to help the students to identify their learning problems and find out the skills they need to focus on. It is the teacher's responsibility to create a positive atmosphere in the language classroom which supports and encourages them to gain confidence. The positive atmosphere makes teaching and learning more pleasant both for the teacher and the learner and supports the students in their work. Creating a positive learning atmosphere is closely linked with motivation, an important and a necessary part of students' work that affects their future success or failure.

Considering all the above, we present some selected materials used during the ESP courses that are meant to help the 1st year students to get familiar with both different basic electronic notions in English, and improving their English skills and abilities:

A. Complete the spaces with the right word: *semiconductor, signal, electronics and transistor, integrated circuits*.

The transistor is the key active component in practically all modern ----- Many consider it to be one of the greatest inventions of the 20th century. A ----- is a semiconductor device used to amplify and switch electronic signals and power. It is composed of a ----- material with at least three terminals for connection to an external circuit. A voltage or current applied to one pair of the transistor's terminals changes the current flowing through another pair of terminals. Because the controlled (output) power can be much more than the controlling (input) power, a transistor can amplify a ----- . Today, some transistors are packaged individually, but many more are found embedded in ----- (Wikipedia, 2011)

B. Find a definition for each word: 1. *semiconductor*, 2. *current flow*, 3. *transistor*, 4. *signal*, 5. *integrated circuit*.

A. an impulse or a fluctuating electric quantity, such as voltage, current, or electric field strength, whose variations represent coded information; B. a device made of interconnected electronic components, such as transistors and resistors; C. a variable parameter, such as a current or electromagnetic wave, by which information is conveyed through an electronic circuit, communications system; D. a small electronic device containing a semiconductor and having at least three electrical contacts; E. the flow of positive charges (from positive to negative terminal).

C. Read the text and select the words according to: 1. *specific words* used by specialists in *electronics*, 2. *specific words* frequently present in *every day conversation*. Give word family for: *amplifier, powerful, and to modify*.

An amplifier is any device used to increase the quality and power of an audio signal and then translate that signal into a physical sound wave. To create a more powerful sound, the amplifier generates a new output signal based on the input signal it first received. The input circuit is the electrical audio signal provided from the tape of a cassette player, for example, or entering from a microphone. Its function is to modify the output circuit by generating a varying resistance to the output circuit to transplant the voltage fluctuations of the original audio signal. (How Does an Amplifier Work? n. d.)

Though many of the students show interest in the above materials they encounter difficulties in accomplishing the required tasks. During the English classes they are asked to use dictionaries (English-Romanian and English-English Dictionaries); unfortunately most of them do not have practice in using them. Even if the vast majority of students recognize most of the terms used in the materials, they have problems and difficulties in reading and pronouncing them.

5. Conclusions

The ESP courses are a priority in technical universities due to the dynamics of today's development in all spheres of activities more complex day by day. The students in technical faculties should know that it is not enough to have professional knowledge in a certain field. In many cases communication is the key for success or failure. As specialists, they need to be able to deal with a variety of subjects, to communicate, to exchange or share information with other specialists from different countries. Dealing with a variety of subjects they have to use English as a primary tool and perform well in negotiating contracts, explaining technological developments and new products, attending professional events etc. We have presented some of the problems the English teacher is confronted with in the learning and teaching process for the first year students of electronics and telecommunications. The first year students need to be encouraged, stimulated and supported in their studies in order to become active and productive participants during the courses. The teacher should pay much attention on the selection of the materials having in view the real needs of the students' study. The ESP teacher has to be ready for rapid efficient adaptations of these materials in case the students encounter problems in accomplishing their tasks. We consider that the English courses and the ESP courses in particular should be part of the curricula as an obligatory subject for at least 2 years of study. Moreover the number of the students in the groups is an urgent demand. The first year students need time to adapt to the new university requirements, to face the new situations they are confronted with both in their university studies and their private life.

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